LOWER PLATTE SOUTH
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Memorandum

TO: Board of Directors
DATE: December 17, 2019
FROM: David Potter, Assistant General Manager DP
SUBJECT: Integrated Management Subcommittee meeting minutes.

The Integrated Management Subcommittee met on Monday, December 16, 2019, at 5:30 p.m. at the NRD Office in Lincoln. Members present included Sarah Wilson, Bob Andersen, Gary Hellerich, Bruce Johnson, Greg Osborn, and Luke Peterson. Members absent included Chelsea Johnson and Mark Spangler. Others present were Larry Ruth, Don Jacobson, Deborah Eagan, Paul Zillig, David Potter, Dan Schulz, Dick Ehrman, and John Engel (HDR).

The only agenda item was consideration of the Lower Platte River Drought Contingency Plan. In August 2016, the District entered into an Interlocal Agreement with Lower Platte North NRD, Papio-Missouri River NRD, City of Lincoln-water, Metropolitan Utilities District (MUD), and the Nebraska Department of Natural Resources (NeDNR) to form the Lower Platte River Consortium. The agreed upon purpose of the Consortium is to study the long-term water supplies available to the Lower Platte River sub-basin to enhance stream flows or aquifer storage to support during times of drought. Members of the Consortium recently amended the duration of the agreement from three (3) years to four (4) years, now ending September 27, 2020.

The study conducted by the Consortium has led to the development of a Drought Contingency Plan. As of September 30, 2019, the Draft Lower Platte River Drought Contingency Plan has been approved by the U.S. Bureau of Reclamation (BOR) as a requirement of their Water Smart Grand funding. Funding was also obtained through the Water Sustainability Fund (WSF). See attached Executive Summary of the Plan. The complete Plan can be found on the LPSNRD website at https://www.lpsnrd.org/lower-platte-river-consortium. The cost of the plan has been funded as follows:

Agency or Grant	Total Contribution
LPSNRD	$26,000
LPNNRD	$26,000
PMRNRD	$26,000
City of Lincoln	$26,000
MUD	$26,000
NeDNR	$26,000
Agreement Sub-Total	**$156,000**
BOR Grant	$200,000
WSF Grant	$195,000
TOTAL	**$551,000**

The next steps in the continuation of the Consortium is for each entity to adopt the Drought Contingency Plan through their respective Boards. If adopted, implementation of the plan only requires the District to participate in annual drought monitoring meetings or phone calls and to share available data on drought conditions. While the plan does evaluate several drought mitigation actions and projects, it does not recommend that any potential/particular project or action be implemented. The plan allows that these projects may be further studied as the Consortium members decide and that they be eligible for future funding. The Consortium is also interested in conducting a drought table top exercise early in 2020.

The meeting was called to order by Chair Wilson. David Potter provided a brief introduction of the plan and introduced John Engel with HDR. Engel gave a presentation on the Drought Contingency Plan, the Consortium, the Planning Process, and the anticipated next steps. Discussion was held on the plan.

It was moved by Andersen, seconded by B. Johnson and unanimously approved to recommend the Board of Directors adopt the Lower Platte River Drought Contingency Plan, dated October 2019.

The subcommittee meeting adjourned at 6:08 p.m.

Lower Platte River Drought Contingency Plan

October 2019

Executive Summary Contents

Executive Summary

The Lower Platte South Natural Resources District (NRD), Papio-Missouri River NRD, Lower Platte North NRD, Metropolitan Utilities District (MUD), Lincoln Water System (LWS), and Nebraska Department of Natural Resources (NeDNR), collectively referred to as the Lower Platte River Consortium (Consortium), have embarked on a collaborative effort to develop a drought contingency plan for the Lower Platte River Basin in Nebraska. Each of the Consortium members have important roles in water management in the Lower Platte River amongst their identified authorities and missions: NRDs are authorized by statute to regulate the use of groundwater while the NeDNR regulates the use of surface water; MUD provides water for the majority of the Omaha metropolitan area; and LWS provides water to the City of Lincoln.

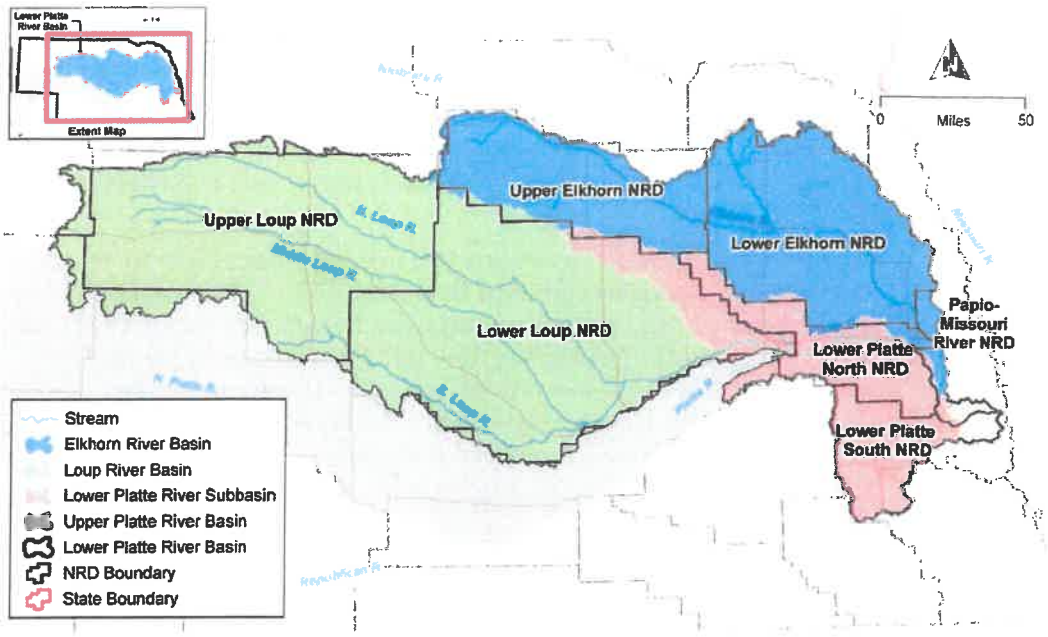
The Lower Platte River, its tributaries, and aquifers serve approximately 80 percent of Nebraska's population, thousands of businesses and industries, includes more than two million irrigated acres, and provides streamflows for threatened and endangered species. The drought-driven risks are diverse and a potential drought in the region would pose serious risk to public health, economy, and fish/wildlife. It is believed that in addressing the water supply shortages during droughts in the Lower Platte River, ancillary benefits to the remaining sectors would accrue including: irrigation, power, environmental, and recreational benefits.

The focus of this first increment of the Drought Plan is to establish a framework for coordination and communication amongst Consortium members to address droughts in the Lower Platte River. In addition a wide range of alternatives for augmenting surface water supplies in the Lower Platte River near Ashland were investigated. This Drought Plan will supplement the current authorities and activities of the Consortium members and is not intended to replace or duplicate efforts (i.e. NRDs address water conservation through their individual groundwater management plans at this time; LWS has a drought management plan prescribing drought triggers and response actions specific to their system operations). With the framework established by this Drought Plan, it is anticipated that Consortium members will continue to evaluate monitoring and communication protocols, mitigation measures, and response actions and revise the plan as necessary.

There are a wide-range of stakeholder interests in the Lower Platte River Basin. The Consortium solicited stakeholder input throughout the planning effort. Two stakeholder workshops and two public open houses were held, and written comments were accepted via comment forms and a project email posted on the project website open to the public.

Member participation in the Consortium is voluntary and member agencies shall not be bound by any initiatives, recommendations or decisions made by the Consortium without a subsequent written agreement or resolution approved by the respective bodies. While represented agencies may elect to seek approval of the Plan by their respective elected officials, formal adoption of the Plan is not required for future participation in the Consortium.

Figure ES-1: Map of Lower Platte River Basin



Drought Contingency Plan Background

In 2017, the Lower Platte River Basin Coalition, which includes the seven NRDs[1] in the Loup, Elkhorn, and Lower Platte River Basins, and NeDNR, adopted the *Lower Platte River Coalition Basin Water Management Plan (Basin Plan)*. The Basin Plan evaluated supplies and demands in the Lower Platte River Basin (Basin) and set criteria for managing new water development, and goals and objectives that work to protect the existing domestic, agricultural, and industrial water uses in the Basin. The Basin Plan found that annual water supplies in the Basin generally tend to be sufficient for most water uses; however, peak demands in the summer months can create water shortages. These shortages are further exacerbated by drought periods when summer flows become most critical in supporting water demands. This planning effort for the *Lower Platte River Drought Contingency Plan* (Drought Plan) followed the development of the Basin Plan to further address water supply shortages during drought periods, when peak demands overlap periods of low streamflows.

Lower Platte River Basin

Basin Water Demands

The water demands and water uses in the Lower Platte River are diverse; they include municipal, domestic, and agricultural uses, instream flows, and hydropower. The water utilities for the municipalities of Omaha and Lincoln, Nebraska, serve the two primary metropolitan areas in Nebraska, constituting approximately 60 percent of Nebraska's population. Both municipalities hold induced recharge permits (permits that protect streamflows adjacent to their well-fields) and municipal groundwater transfer permits (permits where groundwater is transferred from the water well site for use in another location). The Nebraska Game and Parks Commission holds instream flow appropriations for much of the Platte River and specifically in the areas of municipal well-field operations. The Loup Public Power District

[1] This includes the three NRD members of the Consortium (Lower Platte North NRD, Lower Platte South NRD, and Papio-Missouri River NRD).

holds a hydropower appropriation for off-channel hydroelectric power generation. In addition, thousands of individual water rights or groundwater permits are held to support irrigation from both surface water and hydrologically connected groundwater sources.

Basin Water Supplies

Water supplies of the Lower Platte River are driven by snowmelt, rainfall runoff, and aquifer baseflow contributions. Supplies can be highly variable, with annual flows ranging from 2 million acre-feet per year to more than 10 million acre-feet per year.

During low-flow years, the Upper Platte River becomes disconnected from the Lower Platte River with flows at Duncan, Nebraska, representing a negligible portion of flows observed in the Lower Platte River. During these times, most of the flow in the Lower Platte River originates from the groundwater-fed Loup River, Elkhorn River, and Platte River tributaries downstream from Duncan. The water supplies of the Loup River and Elkhorn River subbasins tend to be more reliable because of significant baseflow contributions. During drought periods, these water supplies reliant on baseflow contributions are stressed in support of irrigated agricultural production (primarily corn and soybeans).

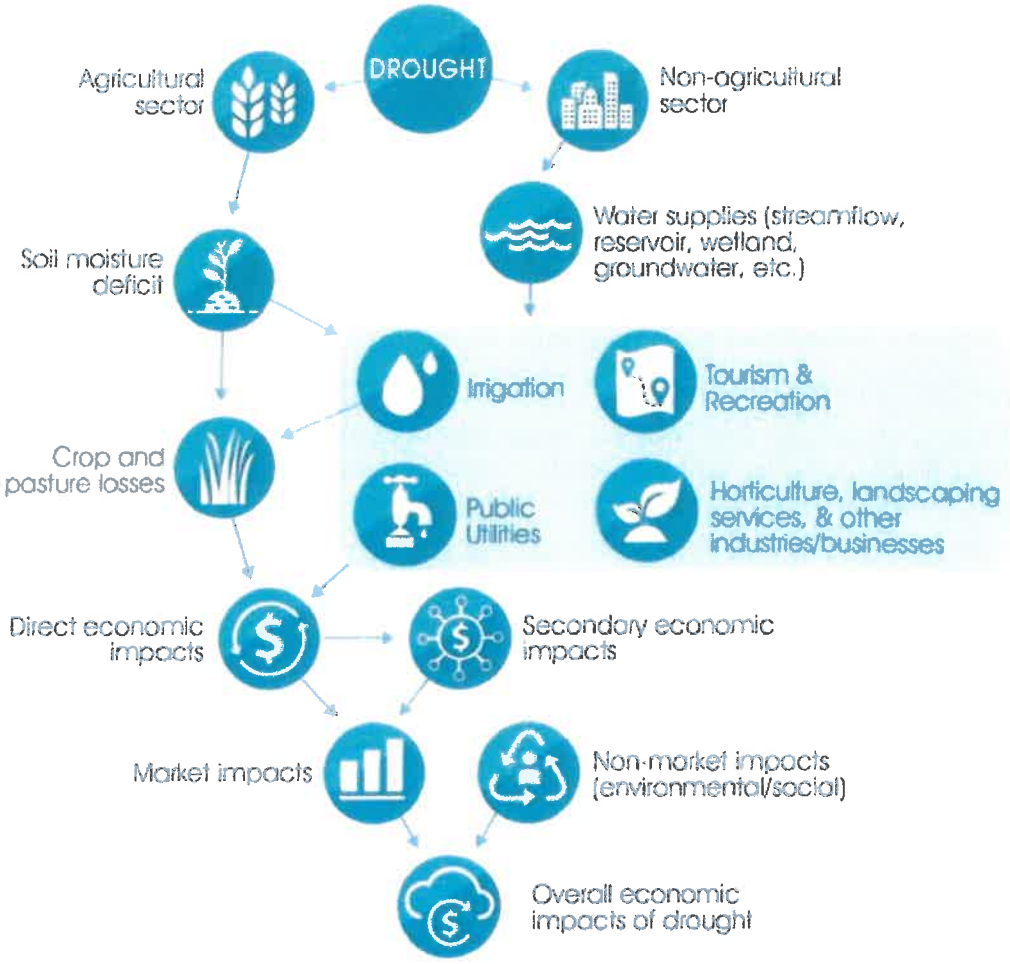
While annual water supplies in the Lower Platte River generally tend to be sufficient for most water uses, peak demands in the summer months can create water shortages, typically in July and August. These shortages are further exacerbated by drought periods when summer flows become most critical in supporting water demands.

Vulnerability Assessment

"[V]ulnerability to drought is the product of numerous interrelated factors such as population growth and shifts, urbanization, demographic characteristics, water use trends, social behavior, and environmental susceptibilities.... The degree to which a population is vulnerable hinges on the ability to anticipate, to deal with, resist, and recover from the drought" (Commission on Water Resource Management 2003).

The effects from drought can be classified as direct and indirect. Direct effects include physical destruction of property, crops, natural resources, as well as public health and safety. Indirect effects are consequences of that destruction, such as temporary unemployment and business interruption (National Academy of Sciences 1999). "The most vulnerable portions of the state in terms of economic impact are cropland, pasture land for animals, recreational areas, and businesses that depend on agricultural industries for the bulk of their business. However, all areas of the state can be impacted by drought events" (Nebraska Emergency Management Agency [NEMA] 2014). Figure ES-2 summarizes sectors that are affected by drought (both agriculture and non-agriculture).

Figure ES-2: An Overview of Drought Economic Effects



Source: Adapted from Ding, Hayes, and Widhalm 2010

Public water systems along the Lower Platte River are largely dependent on aquifers hydrologically connected to the river and its tributaries, and dependent on streamflow for recharge. Omaha and Lincoln, Nebraska's two largest municipalities, rely heavily on water supplies in the Lower Platte River to support well-field operations adjacent to the river. MUD's water system receives roughly half of its capacity from the Lower Platte River and the other half is received from the Missouri River. The capacity of Lincoln Water Systems' Ashland Well-field is directly dependent on flows in the Lower Platte River adjacent to the well-field. The vulnerability of public water supply during drought is amplified in the Lower Platte River Basin due to the lack of redundant water sources. With the exception of MUD, public water systems along the Lower Platte River rely solely on the aquifers hydrologically connected to the Platte River and are reliant on its flows for recharge.

The Lower Platte River provides habitat for numerous species, including federally listed threatened and endangered species, which are dependent on sustained flows. In addition, this reach of the river provides recreational amenities for the eastern portion of the state, including the primary population centers.

Drought Monitoring

Hydroclimate indices assess drought severity and are essential for tracking and anticipating droughts as well as providing historical reference. Indices provide useful triggers to help direct decision-makers toward proactive risk management. For this increment of the Drought Plan, the Palmer Drought Severity Index (PDSI) will be utilized in combination with streamflow observations for drought determination in the Lower Platte River Basin. The PDSI reflects recent precipitation and the soil moisture balance. Zero or near zero PDSI values indicate normal conditions, a negative PDSI value indicates below normal (drought conditions); and a positive value represents above normal (wetter periods).

Four categories of drought have been identified for the Drought Plan. These levels of drought remain consistent with the National Drought Monitor definitions of drought. These categories and corresponding PDSI and streamflow thresholds are presented in Table ES-1.

The following lists the levels of drought and their corresponding definition:

- A Level 0, "Abnormally Dry"[2] indicates an area may be experiencing "short-term dryness slowing planting, growth of crops or pastures" indicating the onset of drought or may be coming out of drought and experiencing lingering effects of drought.
- A Level 1, "Moderate Drought" involves "some damage to crops, pastures; streams, reservoirs, or wells low, some water shortages developing or imminent; and voluntary water-use restrictions requested."
- A Level 2, "Severe Drought" means that "crop or pasture losses likely; water shortages common; and water restrictions imposed."
- A Level 3, "Extreme Drought" involves "major crop/pasture losses" and "widespread water shortages or restrictions."

Table ES-1: Drought Triggers

Category	Level	Palmer Drought Severity Index (PDSI)	Platte River Stream flow at Ashland
Mild Drought	Level 0	-1.0 to -1.99	--
Moderate Drought	Level 1	-2.0 to -2.99	3,000-1,500 cfs
Severe Drought	Level 2	-3.0 to -3.99	1,500-500 cfs
Extreme Drought	Level 3	-4.0 and below	Less than 500 cfs

Notes: PDSI = Palmer Drought Severity Index

Analysis of historic PDSI values from the last 116 years reveal that mild, moderate, severe, and extreme droughts have historically occurred in the Lower Platte River Basin on average once every three, six, nine, and fourteen years, respectively.

[2] An "Abnormally Dry" classification by the National Drought Monitor corresponds to a PDSI "mild drought" classification. The "Moderate Drought", "Severe Drought" and "Extreme Drought" classifications are the same between the National Drought Monitor and PDSI.

It should be noted that no groundwater trigger is included in Table ES-1. Each NRD has some form of drought monitoring and triggers for response actions in defined areas of their District. The intent of the Drought Plan is not to replace each members' groundwater monitoring and management plans, but rather to provide consistent, basin-scale data and information that can be used by NRDs, while maintaining locally-based management frameworks. The individual NRD plans are discussed in detail in Appendix A.

Understanding the behavior of the Platte River at Ashland as flows recede is important to the ability of the Consortium to forecast and properly time the implementation of response actions. Using the Platte River at Ashland Recession Tool allows the user to enter the current observed flow in the Platte River at Ashland and predict the flow decay behavior for the next 30 days, assuming no further inputs to the system (precipitation runoff or upstream storage releases). The resulting recession curve can be used to estimate the days until a critical threshold is reached. The development of the Platte River at Ashland Recession Tool is discussed in detail in Appendix E. Figure ES-3 is a schematic of the functional utility of the Platte River at Ashland Recession Tool in drought forecasting and response.

Figure ES-3: Platte River at Ashland Recession Tool

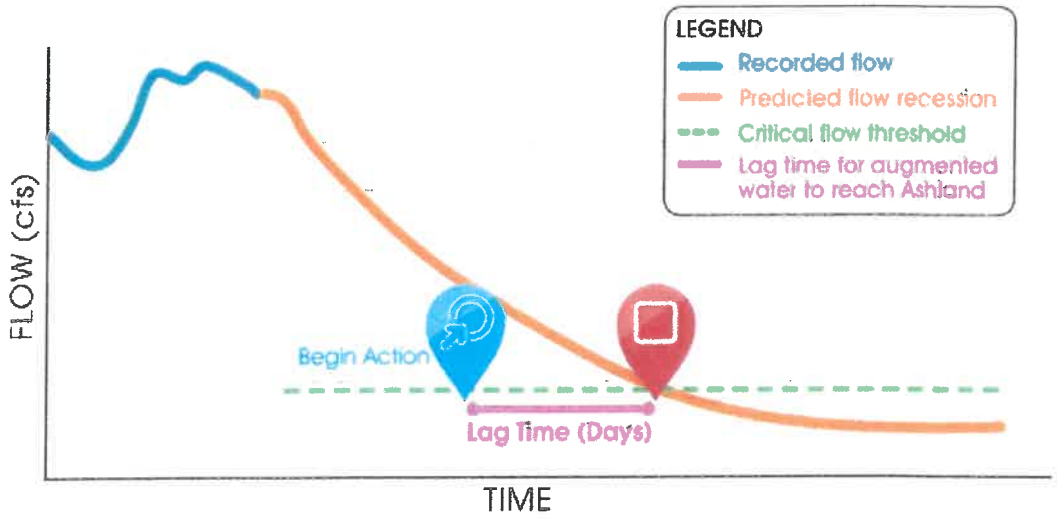
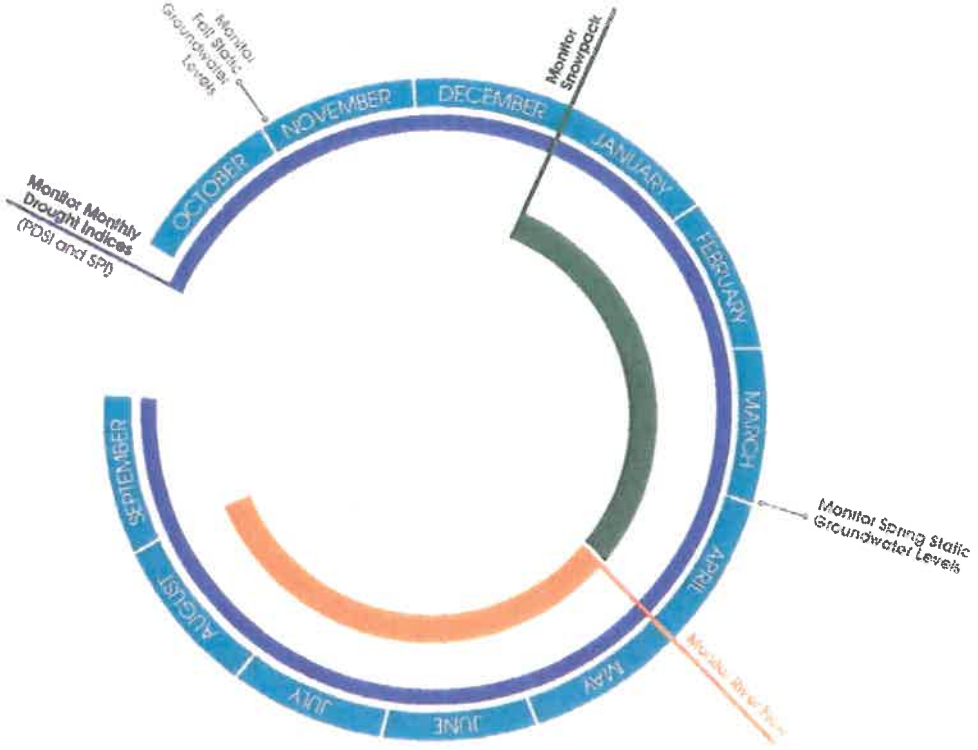


Figure ES-4: Drought Monitoring Continuum



The recommended timeline for drought monitoring is displayed in Figure ES-4. Hydroclimate indices (Standardized Precipitation Index (SPI) and PDSI) should be monitored year round. Groundwater levels are monitored by NRDs in the spring and fall of each year in accordance with their individual groundwater management plans. Snowpack volumes should be monitored from the beginning of the calendar year through the runoff season. Streamflows should be monitored starting in late spring through the summer when water use for irrigation, cooling, and lawn watering is at its peak.

Drought Management

Drought Mitigation Measures

Drought mitigation measures are actions, programs, and strategies implemented during non-drought periods to address potential risks and effects and to reduce the need for response actions; implementation of drought mitigation measures improves long-term resilience and reliability of the regional water supply.

Nine mitigation measures, and variations or combinations thereof, were evaluated as part of the Drought Planning effort to estimate potential increases in regional water supply. These measures include the following and are summarized in Tables ES-2A and ES-2B:

- Installing an alluvial well-field adjacent to the Missouri River and pumping water to a tributary of the Elkhorn River for availability on demand (two alternatives considered in Tables ES-2A and ES-2B: one that discharges directly into Bell Creek and a second that discharges into the proposed Bell Creek Reservoir);
- Purchasing storage in the existing Sherman Reservoir and releasing water on demand (two release volumes considered in Table ES-2A);

- A new surface water storage reservoir on Skull Creek near Linwood for releasing water on demand;
- A new surface water storage reservoir on Bell Creek east of Winslow for releasing water on demand;
- Capture of Middle Loup River water in the non-irrigation season and diversion into the Middle Loup Canal system for intentional recharge and increase baseflow(two demand scenarios evaluated in Tables ES-2A and ES-2B: one that considers the historic Loup hydropower operations downstream and a second that considers the full Loup hydropower appropriation downstream);
- Installing a well-field to tap into groundwater aquifers with limited connection to streamflow that can be pumped to the river to augment flows;
- Pumping from alluvial sandpits directly to the river to augment flows; and
- A rapid response area/dry-year-lease agreement with farmers irrigating lands adjacent to the main channel of the Platte River from the alluvial aquifer.
- Interconnection of MUD and LWS finished water supplies, providing LWS access to the Missouri River as a source of potable water

Conceptual design of infrastructure requirements and anticipated operational characteristics were defined for each mitigation measure. In addition, the estimated project yield to the Lower Platte River at the Ashland gage was determined. For projects upstream in the basin, a routing tool was used to estimate the losses that occur during conveyance to the Ashland gage. This routing tool utilizes historic reach loss data during low-flow periods to estimate conveyance losses (see Appendix D). As part of this planning effort, continuous recording monitoring wells paired with stage recorders were installed to foster a better understanding of losses in the Lower Platte River under varying hydrologic conditions.

For comparison of alternative costs and benefits, a 20-year period was evaluated to reflect the relative reliability of water from the mitigation action, i.e. for some mitigation actions water will not be available every year. A 15-day operation period, targeting the typical late-July/early-August critical low-flow period in the Lower Platte River, was assumed for project operations. For developing cost/acre-foot estimates included in Table ES-2A, costs were estimated over a 20-year period without using a discount rate or otherwise accounting for the time value of money. Benefits were based on acre-feet of water estimated to be delivered at the Ashland gage during the 15-day target period over the 20-yr period. Assumptions for each mitigation action are described in Section 5.0 and Appendix C.

Table ES-2A: Evaluation of Potential Mitigation Measures (cost estimate versus volume of water added)

Alternative	Volume Added at Source		Volume Increase at Ashland				
	Cumulative AF/15 days	Ave Daily cfs	Where Added	Cumulative AF/15 days	Ave Daily cfs	Cost Estimate	Cost per acre-foot added at Ashland
Import Missouri River Water (via alluvial well-field) to Bell Creek (no reservoir)	59,400	100	Waterloo	46,300	80	$76,572,840	$1,654
Sherman Release (400 cfs at St Paul)	47,520	400	St. Paul	15,720	132	$9,628,000	$612
Sherman Release (250 cfs at St. Paul)	29,700	250	St. Paul	9,800	83	$6,955,000	$710
Skull Creek Res. Rel. (100 cfs at Linwood)	59,400	100	Linwood	46,300	80	$32,630,000	$705
Bell Creek Reservoir (Release 100 cfs at Waterloo)	59,400	100	Waterloo	46,300	80	$81,520,000	$1,761
Pump Missouri River water (vial alluvial well-field) into Bell Creek Reservoir	59,400	100	Waterloo	46,300	80	$129,564,000	$2,798
Middle Loup Canal Recharge (Historic Loup Canal Operations)	7,525	13	Arcadia	2,525	4	$16,360,000	$6,478
Middle Loup Canal Recharge (Full Hydropower Right downstream)	2,034	3	Arcadia	634	1	$5,225,000	$8,238
Alluvial sandpit pumping	14,850	100	Leshara	14,850	100	$5,980,000	$403
Augmentation Well-field	59,400	100	TBD	59,400	100	$81,008,040	$1,364
Rapid Response Area/ Dry-year Lease	4,000	33	Columbus to Louisville	4,000	33	$248,500,800	$62,125
Interconnection of MUD and LWS finished water supplies	See notes	See notes	See notes	See notes	See notes	See notes	See notes

Notes:
This list is not intended to be all-inclusive. Potential mitigation measures may be further evaluated in future increments of the Drought Plan
AF = acre-feet; cfs = cubic feet per second;
20-year period evaluated to reflect relative reliability of each measure;
Fifteen-day operating period, targeting late July/early August critical low-flow period;
Routing tool used to estimate reach gains/losses;
Cost per acre-foot based on water that makes it to Ashland (common point). Reach losses for evaluation assume 66% loss from the Loup River to Ashland, 20% loss from the Elkhorn River to Ashland, and 20% loss from North Bend to Ashland;
Interconnection would directly link of MUD and LWS finished water supplies without utilizing the Platte River for conveyance and would directly address impacts of drought on potable water supplies. A more detailed analysis of feasibility and costs associated with this alternative is being conducted as a separate study.

Table ES-2B: Evaluation of Potential Mitigation Measures (advantages, disadvantages, and uncertainties)

Alternative	Advantages	Disadvantages	Uncertainties
Import Missouri River Water (to Bell Creek/no reservoir)	• Secondary source of water outside of Platte River basin increases reliability of supply. • Operational every year & year-round	• Larger construction cost than many alternatives • Implementation - 5-10 years	• Future regulation on Missouri River • Well field siting
Sherman Release (400 cfs at St Paul)	• Utilizes existing facilities (no construction cost; ability to pilot study) • Produces large volume of water on-demand • Loup River historically a reliable water supply source. • Implementation: 1-2 years	• Likely limitation on frequency of call on storage water • Significant conveyance losses from release point to Lower Platte River	• Requires cooperation and agreements with existing facility owners. • Negotiations will dictate price. • Cost estimates based on similar agreements in state.
Sherman Release (250 cfs at St. Paul)			
Skull Creek Res. Rel. (100 cfs at Linwood)	• Produces large volume of water on demand • Potential for multi-purpose facility	• Larger construction cost than many alternatives • Land requirements, involving multiple landowners • Implementation: 5-10 years	• Runoff volume varies year to year • Land use impacts on runoff • Implementation (permitting, land purchase, etc.)
Bell Creek Reservoir (Release 100 cfs at Waterloo)			
Pump Missouri River water (via alluvial well-field) into Bell Creek Reservoir	• Secondary source of water outside of Platte River basin increases reliability. • Operational every year & year-round. • Importing into Bell Creek Reservoir requires a lower capacity system for importing water - saving money	• Larger costs associated with combining alternatives that require both land and infrastructure. • Implementation: 5-10 years	• Future regulation on Missouri River • Well field siting • Implementation (permitting, land purchase, etc.)
Middle Loup Canal Recharge (Historic Loup Canal Operations)	• The canal recharge and dry-year lease projects are passive mitigation measures whose benefits (passive baseflow returns) accrue throughout the year, adding to the overall supply reliability. • Existing infrastructure – no initial construction costs • Implementation: 1-2 years	• Unavailable to release a pulse of water volume "on-demand". • Takes time for the full benefit to be realized in river (lag effect) and some attenuation	• Requires cooperation and agreements with existing facility and/or landowners. • Negotiations will dictate price. • Cost estimates based on similar agreements in state. • Amount of improvement of overall system supply reliability from year around accretions
Middle Loup Canal Recharge (Full Hydropower Right downstream)			
Alluvial sandpit pumping	• Minimal infrastructure costs (pumps from existing sandpits) • Utilizes existing sandpits (no construction costs) • Implementation: 3-5 years	• Limited operation window as pumping this close to the river may cause depletions to the stream (lag effect) that amplify impacts during extended drought • Logistics of securing agreements with multiple landowners • Likely limitation on the number of calls allowed in a 20-year period	
Augmentation Well-field	• Available every year & year-round • Can be located closer to critical reach to reduce losses compared to alternatives producing similar volumes upstream in the Basin.	• Land & infrastructure costs make this one of the more expensive alternatives. • Adds to overall depletions • Implementation: 5-10 years	• Siting to avoid interference with existing wells. • Long-term reliability of aquifer
Rapid Response Area/ Dry-year Lease	• No infrastructure or construction necessary.	• Logistics of securing agreements with thousands of producers • Likely limitation on the number of calls allowed in a 20-year period • Most expensive of all the alternatives by an order of magnitude based on assumptions. • Crop insurance likely affected in years when agreement enforced	• Negotiations will dictate price. • Cost estimates based on similar agreements in state, and factors such as cost differential between irrigated and dry land rental rates. • Uncertain how many producers would participate (benefits assume 100% participation which is unlikely)
Interconnection of MUD and LWS finished water supplies	• Directly and efficiently addresses drought impacts on potable water supplies • Provides access to the drought-resistant Missouri River as a source • Implementation: 3-5 years	• Does not directly address low flow conditions on the Platte River during drought; however may reduce pumping demands on municipal wells adjacent to the Platte River during drought conditions • Infrastructure costs associated with linking finished water supplies	• Feasibility of linking water supplies (water chemistry, system hydraulics, legal framework, etc.) • A more detailed feasibility study is currently being undertaken

Note: This list is not intended to be all-inclusive. Potential mitigation measures may be further evaluated in future increments of the Drought Plan

Drought Response Actions

Drought response actions are near-term actions triggered during specific stages of drought to manage the limited supply and to decrease the severity of immediate effects of drought periods on the regional water supply. In this first increment of the Drought Plan, potential mitigation measures (Table E-2) have been evaluated, but preferred measures have not been determined or constructed; therefore, the primary drought response action available to the Consortium at this time is communication and outreach. Individual members of the Consortium have specific drought response actions that each will continue to implement in response to drought conditions.

Consistent and coordinated messaging to basin water users (municipal, industrial, domestic, irrigation, etc.), as well as the general public, raises awareness of the current water supply conditions, allows water users to proactively alter their demand and usage based on limited water supplies, and defines expectations of forecasted conditions and potential actions in response to the drought.

Operational and Administrative Framework

Future Lower Platte River Drought Contingency Plan Updates

The Drought Plan and associated planning is meant to be part of an adaptive process that is routinely updated to reflect the needs of the basin. The Consortium will hold meetings each year and will evaluate the need for updating the Drought Plan every five years. The following list provides information related to the anticipated frequency of Consortium actions and steps taken in regard to updating the Drought Plan:

- On an annual basis, the Consortium will gather information and make any necessary updates to the Vulnerability Assessment.
- On an annual basis, the Consortium will review any changes in the Vulnerability Assessment, determine the need for new and revised actions, update the status of existing actions, and add new actions (as needed).
- Every five years, the Consortium will assess the need for and prepare an updated Drought Plan (as needed).

It should be noted that the Consortium may identify planning and technical efforts outside those anticipated that need to be undertaken based on changed conditions or a potential need.

Continued Communication and Outreach

The Consortium will consider the only drought response action available to it at this time, which is communication and outreach. The following list provides information related to communication and outreach:

- The Consortium will keep the project website updated and will send emails to keep interested stakeholders informed of meetings, new materials, and other information related to the Drought Plan and its implementation.
- The Consortium will post drought monitoring information and drought status information on the project website as needed and as conditions change.
- Each individual agency in the Consortium will be responsible for informing its constituents, customers, and the public of any actions initiated and related progress and results.

- Coordination and information sharing with other ongoing efforts will be mutually beneficial (Missouri Basin Plan, Nebraska Emergency Management Agency, etc.). It is anticipated that this coordination and information sharing with other ongoing efforts and agencies will occur on an as-needed basis.